

# इंटरनेट

# मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8271-2-9 (1982): Quartz Crystal Units Used for Frequency Control and Selection, Part 2: Series AA for Oscillators, Section 9: Quartz Crystal Unit Type AA-09 [LITD 5: Semiconductor and Other Electronic Components and Devices]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

SPECIFICATION FOR  
QUARTZ CRYSTAL UNITS USED FOR FREQUENCY  
CONTROL AND SELECTION

## PART II SERIES AA FOR OSCILLATORS

## Section 9 Quartz Crystal Unit Type AA-09

**0. General** — This standard shall be read in conjunction with IS : 8271 ( Part I )-1981 ' Specification for quartz crystal units used for frequency control and selection: Part I General requirements and tests ( first revision ) '.

**1. Outline and Dimensions** — Holder outline shall conform to Type AA ( see Sheet 1A of IS : 4570-1968 Specification for crystal holders ).

**2. Marking** — See 8 of IS : 8271 ( Part I )-1981.

**3. Construction and Workmanship** — See 7 of IS : 8271 ( Part I )-1981.

**4. Test Schedule and Detail Requirements**

**4.1 General Conditions for Test** — See 9.2 of IS : 8271 ( Part I )-1981.

**4.2 Test Schedule** — The sequence and grouping of type, routine and acceptance tests shall be as per 9.1 of IS : 8271 ( Part I )-1981.

**4.3 Detail Requirements** — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE AA-09  
( Clause 4.3 )

SI No.	Characteristic	Requirements
(1)	(2)	(3)
i)	Type of holder	AA (see 1 )
ii)	Frequency range	10 to 60 MHz
iii)	Frequency tolerance:	
	a) Room temperature	± 75 ppm
	b) Operating temperature range	± 15 ppm
iv)	Frequency stability	± 5 ppm
v)	Resonance resistance	40 Ohms, Max
vi)	Mode of oscillation	Third overtone
vii)	Load capacitance	Infinity ( series )
viii)	Capacitance shunt	7 pF, Max
ix)	Reference temperature	75°C ± 1°C
x)	Temperature range:	
	a) Operating	75°C ± 5°C
	b) Operable	– 55°C to + 70°C and + 80 to + 90°C
xi)	Test set, calibration values and rated drive level	See Table 2
xii)	Shock [ as per 9.15 ( Severity A ) of IS : 8271 ( Part I )-1981 ]:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xiii)	Vibration [ as per 9.16.1 ( Severity A ) of IS : 8271 ( Part I )-1981 ]:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xiv)	Temperature cycling:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xv)	Temperature run:	
	a) Frequency change permitted	± 5 ppm
	b) Resonance resistance change permitted	± 10 percent
xvi)	Ageing Frequency change permitted	5 ppm

TABLE 2 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL  
[ Table 1, Item ( xi ) ]

SI No.	Frequency Range	Calibration Values		Rated Drive Level
		Resistance	Resistor Voltage Drop	
	MHz	Ohms	Volts	mW
(1)	(2)	(3)	(4)	(5)
i)	From 10 to 15	60	0.35	2.0 ± 0.4
ii)	Over 15 to 25	40	0.28	2.0 ± 0.4
iii)	Over 25 to 60	40	0.20	1.0 ± 0.2
For SI No. (i) to (iii) Test Set TS 683/TSM				